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ABSTRACT

Presented is an evaluation of a program which provided supplementary pre-reading and mathematics instruction to multiply handicapped children (physically and mentally handicapped) in six elementary and two intermediate schools. It is explained that students were individually instructed on objectives which they failed on the McGraw Hill Test of Basic Experiences (TOBE). Results of the TOBE language and mathematics test are said to indicate that 70% of the Ss achieved mastery in at least five language and math objectives. Data on student performance is presented, including the distribution of percentage level of mastery of instructional objectives. Eight recommendations are made, including minor expansion of the program, review of the TOBE, and maintenance of student performance data. (CL)

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EVALUATION REPORT

Function No. 09-69603

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BCRMD Program for Multiply Handicapped Pupils

School Year 1975-1976

Dr. Gary Echternacht

An evaluation of a New York City School district educational project funded under Title I of the Elementary and Secondary Education Act of 1965 (Pl 89-10) performed for the Board of Education of the City of New York for the 1975-76 school year.

EC 10 3370

DR. ANTHONY J. POLEMENI, DIRECTOR

BOARD OF EDUCATION OF THE CITY OF NEW YORK
OFFICE OF EDUCATIONAL EVALUATION
110 LIVINGSTON STREET, BROOKLYN, N. Y. 11201

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Chapter I

Program Description

Funded under ESEA Title I, the Program for Multiply Handicapped Pupils was aimed at providing eligible multiply handicapped children with supplementary instruction in pre-reading and mathematics concepts.[1] The program was established at eight schools--six elementary and two intermediate--throughout the city.[2] In each of the schools there was an established special education program for multiply handicapped students staffed by tax levied teachers occupying a wing or part of a regular school building. Classes in the tax levied program were nongraded; students participating in the Title I program were those living in Title I designated areas. Where only one or two students at a particular school lived in non-Title I designated areas, all students in the school received Title I instruction.

The instructional program was staffed by nine teachers, and supported by one psychologist, one guidance counselor, one social worker, and four family assistants all under the direction of a project coordinator. In the larger schools, teaching staff were given full-time assignments at the school, while teachers were rotated at the other schools so that all students would be given sufficient instructional time. Supporting staff worked from

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[1] Students were considered multiply handicapped if they suffered from both physical and mental handicaps. Although some of the older students could recognize some printed words, the vast majority of students in the program could not read; thus, pre-reading and mathematics concepts were emphasized.

[2] Participating elementary schools were P.S.76X, P.S.160X, P.S.33M, P.S.201Q, P.S.52K, and PS.3R. Participating intermediate schools were I.S.144X and I.S.23[illegible].

a central office and visited each school according to program needs. Because of cutbacks in the school budget and procedures used to fill staff openings, the eventual project coordinator did not begin work until mid-November and two family worker positions were not filled until midway through the program.

Although teachers and support staff had been working with students from the beginning of the school term, the school budget crisis and subsequent shuffling of people delayed the beginning of the diagnostic-prescriptive portion of the instructional program. There was a natural hesitancy to begin the program until a project coordinator was named. By the time teaching staff had been trained to use the instructional materials and they were ordered and received, the diagnostic-prescriptive part of the program did not begin until December 1, 1975 and was concluded May 5, 1976.

The general objective of the program was to reinforce concepts taught by the tax levied teachers and to provide information to those teachers on each child's abilities and disabilities. More specifically, the major program goal was for 70 percent of the participants to achieve mastery on at least five instructional objectives each in language and mathematics while in the program.

In order to accomplish this goal students were taken from their classrooms to work individually with a Title I teacher. At first, each child was given Level L of CTB/McGraw-Hill's Test of Basic Experiences (TOBE) in language and mathematics. This test, which covers 28 objectives each in language and mathematics, was administered individually or in groups of two and became the basis for all subsequent instruction.[3]

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[3]The TOBE was administered under non-standard conditions. For example, because the attention span of many of the children was short, only five to eight items were administered at any one setting.

After testing was completed, students were individually instructed in those instructional objectives they failed. Teachers used published materials based on the specific needs of each child, books, games, puzzles, and teacher-made materials as part of their instruction. When a teacher believed a student had learned a specific concept, she retested the student with the TOBE on that objective. If the student answered the test item correctly, he proceeded to another objective that he had missed. Teachers spent about 30 minutes with each student at a session and saw a student between two and five times a week. On the other hand, if the student missed the item again, he received more instruction. Although the supporting staff did not participate directly in the instruction, they provided consultation, counseling, and services necessary for students with severe handicapping conditions.

Chapter II

Evaluation Procedures

As stated in the evaluation design, the evaluation objectives were given as,

1. "To determine if, as a result of participation in the program, 70 percent of the pupils master at least five instructional objectives in reading and mathematics which prior to the program they did not master."

2. "To determine, as a result of participation in the program, the extent to which pupils demonstrate mastery of instructional objectives."

Although not explicitly stated in the evaluation design, a third objective consisted of determining the extent that the program, as actually carried out, coincided with the program as described in the project proposal. For the most part, all students in the program participated in the evaluation.[4]

The extent that the above two objectives were accomplished was determined by analyzing results from the two diagnostic-prescriptive tests, Level L of the TOBE language test and Level L of the mathematics test. Each student in the evaluation completed each item in each test as part of "entry" or pre-testing. Teachers recorded on a class evaluation record whether a student showed mastery of each objective on the entry testing or whether a student failed the objective. Students were listed individually on class evaluation records for language and mathematics along with the test results for each instructional objective. Failure to answer an item

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[4] Students who entered the program very late were not tested in many instances. Other students did not respond to the test items and, hence, were considered "untestable," and not considered in the evaluation.

correctly on entry testing was indicated by placing an "E" in cell for the missed objective; correct answers were indicated by an "M" in the corresponding cell. There was only one test item per instructional objective.

Teachers used the class evaluation records to identify on which of the objectives a student needed instruction. Instruction was given only on those objectives that the student missed and that the teacher believed were important.[5] When a teacher believed that a student had learned an objective, she retested the student with the same item as used in entry testing. If the student answered correctly, an "M" was recorded next to the "E" in the appropriate cell, indicating that the student had achieved mastery as a result of instruction. If the student failed again, instruction continued. Because a project coordinator was not assigned until November, pre-testing did not begin until December 1, 1975, was completed in mid-December, with instruction and retesting continuing until May 5, 1976. Subsequent analysis of the data provided on the class evaluation records--i.e., the relative frequencies of "E," "EM," and "M" by student and objectives--indicated the degree that the evaluation objectives were met.

At the conclusion of the program, the class evaluation records were mailed to the evaluator for analysis. Data analyses consisted of tabulating a number of distributions by students and objectives including: a) the distribution of students failing to achieve mastery on the entry test and not receiving sufficient instruction to achieve mastery; b) the distribution of students achieving mastery prior to instruction; c) the distribution of

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[5] In other words, priority in teaching instructional objectives was determined by individual teachers. Although some teachers completed instruction on each objective, other teachers with large enrollments found it more parsimonious to limit instruction on objectives that they considered of questionable value.

student mastery resulting from instruction; d) the distribution of the number of objectives mastered after instruction; and e) the distribution of the percentage of students achieving various levels of mastery. The results of these analyses are presented in the next chapter.

The chief limitation of the TOBE was that it was a norm-referenced test designed for kindergarten and first grade students used as a criterion-referenced test with multiply handicapped students ranging in age from six to twenty. For many of the older students, the test was too easy as their cognitive abilities were higher than the level of the test. Other students found the test extremely difficult, missing more than two-thirds of the items. Still other students would show mastery of a concept when physical objects were used, yet they would fail the same concept when presented in paper and pencil form, perhaps because of their difficulties with perception. Only one test item was given on the TOBE for each objective; hardly adequate as a sample of items on which to show mastery of a concept.

The discrepancy analysis was accomplished by interviews and observations by the evaluator during visits to each of the program sites. During interviews project staff were asked about their responsibilities and procedures, the reported responses were then compared against those listed in the project proposal.

Chapter III

Findings

The first evaluation objective was to determine if, as a result of participation in the program, 70 percent of the students mastered at least five of the instructional objectives they failed on entry testing. Table 1 shows the distribution of the number of instructional objectives mastered as a result of instruction for both language and mathematics.

Table 1

Distribution of the Number of Instructional Objectives Mastered as a Result of Instruction

Number of Instructional Objectives Mastered	Language (N = 162)		Mathematics (N = 162)	
	No. of Pupils	Percent	No. of Pupils	Percent
Over 12	19	11.7	20	12.3
12	3	1.8	2	1.2
11	4	2.5	9	5.6
10	6	3.7	10	6.2
9	14	8.6	9	5.6
8	15	9.3	12	7.4
7	12	7.4	8	4.9
6	14	8.6	16	9.9
5	30	18.5	27	16.7
4	13	8.0	12	7.4
3	10	6.2	15	9.3
2	10	6.2	10	6.2
1	7	4.3	9	5.6
0	8	4.9	3	1.8

Data in the above table shows that the program successfully achieved the first evaluation objective in both language and mathematics. Exactly 70 percent of the students enrolled achieved mastery in at least five objectives during the program in language. The results were identical for mathematics. This objective, as well as the following one, was brought about by using the TOBE as a diagnostic-prescriptive instrument as described in Chapter I.

The second evaluation objective was to determine, as a result of participation in the program, the extent to which students demonstrated mastery of the instructional objectives. This was approached through four analyses. First, the extent that students had mastered the instructional objectives prior to the program was determined. Those results appear in Table 2. The column labeled "percentage of mastery of instructional objectives" indicates the proportion of objectives a student answered correctly on entry testing. If a student correctly answered 14 of the 28 language items on the entry list, his percentage mastery would be 50 percent. The table illustrates the extreme variation in ability by the students. For example, over half of the students answered three of five items correctly on entry testing in both language and mathematics. On the other hand, a substantial number of students answered fewer than two of five items correctly on entry testing. Although not evident in the above table, 12 percent of the students answered 24 or more of the 28 items correctly in both language and mathematics on entry testing. The significance of this number is that these students could not achieve the main evaluation objective of mastering at least five objectives during the program: they had simply scored too high on the entry test, missing fewer than five items.

Table 2

Distribution of Pupil Mastery of Instructional Objectives
Prior to Instruction

Percentage of Mastery of Instructional Objectives	Language (N = 162)		Mathematics (N = 162)	
	No. of Pupils	Percent	No. of Pupils	Percent
81 - 100%	33	20.4	27	16.7
61 - 80%	62	38.3	63	38.9
41 - 60%	37	22.8	31	19.1
21 - 40%	28	17.3	36	22.2
0 - 20%	2	1.2	5	3.1

A second indication of the extent that students achieved mastery of the program objectives can be gained by examining the number of instructional objectives a student failed on entry testing and which he did not master by the end of the program. Table 3 gives the distribution of the number of objectives failed on entry testing for which the student did not achieve mastery during the program. The table shows that 37 percent of the students had achieved mastery in all of the language objectives--i.e., they had no objectives failed at the conclusion of testing--and 34 percent had achieved mastery in all of the mathematics objectives. Examination of Table 3 further indicates that at the conclusion of testing, more than half of the students in the program had mastered at least 26 of 28 objectives in language and mathematics.

Table 3

Distribution of the Number of Instructional Objectives Failed on Entry Testing and Not Mastering During the Program

Number of Instructional Objectives Failed	Language (N = 162)		Mathematics (N = 162)	
	No. of Pupils	Percent	No. of Pupils	Percent
10 and more	31	19.1	30	18.5
9	2	1.2	10	6.2
8	5	3.1	5	3.1
7	8	4.9	7	4.3
6	8	4.9	5	3.1
5	9	5.6	7	4.3
4	7	4.3	4	2.5
3	11	6.8	9	5.6
2	14	8.6	12	7.4
1	7	4.3	18	11.1
0	60	37.0	55	34.0

The full extent of student mastery at the conclusion of testing is illustrated in Table 4. This table shows the distribution of percentage level of mastery of instructional objectives. Percentage level of mastery simply means the proportion of the objectives missed on entry testing that were later mastered during the program. For example, if a student missed 10 items on entry testing and later mastered 7 of those as a result of instruction, his percentage level of mastery would be 70 percent. The table shows a substantial number (60 in language, 55 in mathematics) of students mastering every objective they missed on entry testing. The remaining portion of the distribution is fairly uniform, indicating again the diversity of students in the program.

Table 4

Distribution of Percentage Level of Mastery of Instructional Objectives

Percentage Level of Mastery*	Language (N = 162) No. of Pupils	Percent	Mathematics (N = 162) No. of Pupils	Percent
100%	60	37.0	55	34.0
90 - 99%	3	1.9	8	4.9
80 - 89%	14	8.6	19	11.7
70 - 79%	13	8.0	7	4.3
60 - 69%	10	6.2	12	7.4
50 - 59%	13	8.0	10	6.2
40 - 49%	12	7.4	11	6.8
30 - 39%	9	5.6	15	9.3
20 - 29%	13	8.0	8	4.9
10 - 19%	6	3.7	9	5.6
0 - 9%	9	5.6	8	4.9

*Percentage Level of Mastery = (# Objectives Achieved)/(# Objectives Missed on Entry)

The above analyses indicated the degree that students mastered different numbers of objectives. In the following analysis the achievement of specific objectives is considered. Table 5 shows the ratio and percentage of students who mastered each instructional objective as a result of instruction. For example, the table shows that 12 students failed TOBE objective 1a in language and that 10 of those students, or 83 percent, later mastered that objective. The table shows 39 students failing mathematics objective 1a, with 33 or 85 percent of those students later mastering the objective.

The results for language show a number of interesting features. The most frequently missed objectives in language were 6a (listening/subject-verb relationship), 7b (letter discrimination/perception), 10b (listening/adverb),

Table 5

Distribution of Student Mastery by Instructional Objective as a Result of Instruction

TOBE Objective Number	Language		Mathematics	
	Achievement Ratio*	Percent of Mastery	Achievement Ratio*	Percent of Mastery
1a	10/12	83	33/39	85
1b	60/71	85	37/41	90
2a	33/42	79	30/39	77
2b	21/27	78	11/34	32
3a	26/67	39	56/84	67
3b	29/44	66	52/83	63
4a	39/51	76	41/51	80
4b	27/49	55	37/46	80
5a	42/57	74	34/44	77
5b	17/20	85	45/48	94
6a	66/104	63	60/110	55
6b	60/82	73	46/98	47
7a	35/83	42	54/68	79
7b	60/92	65	51/78	65
8a	61/82	74	30/61	49
8b	41/72	57	39/109	36
9a	26/31	84	31/53	58
9b	18/39	46	32/45	71
10a	26/71	37	25/45	56
10b	55/95	58	59/94	63
11a	46/79	58	28/69	41
11b	53/79	67	63/88	72
12a	30/45	67	38/88	43
12b	25/45	56	21/42	50
13a	28/62	45	55/84	65
13b	52/93	56	35/72	49
14a	26/65	40	41/82	50
14b	41/87	47	29/57	51

*Achievement Ratio = (#Students Achieving Mastery)/(# Students Attempting Mastery)

and 13b (reading readiness/rhyming). The objectives giving teachers the most difficulty, in terms of low percent of mastery, were 3a (relating phonemes to letters), 7a (sound-letter relationships), 9b (negative class inclusion--i.e., what is not dark and not little), 10a (phonemes), and 14a (class inclusion terms/logic--i.e., the notion of "all except"). In general, both students and teachers did well with the remaining objectives.

In mathematics students had the greatest difficulty in entry testing with objectives 6a (measuring-interpreting coldness from a thermometer), 6b (establishing relationships), 8b (inverse proportions--i.e., recognizing less liquid in a jar means more air in the jar), and 10b (geometrical terms/ differentiating between angle and curve). Teachers had the most difficulty in teaching 2b (clock reading) and 8b (inverse proportion).

Results of the discrepancy analysis indicated that the implemented program coincided with the program as described in the proposal with the exception of enrollment estimates. The project proposal indicates that the program is designed for 300 students, while actual Title I enrollment was found to be only 186.[6] Otherwise, teachers and support staff performed roles as described in the project proposal. Examination of the facilities and materials used in the project revealed the facilities to be adequate and the instructional materials excellent. Although the program initially serviced all students in a school regardless of whether they lived in Title I designated areas, by the beginning of the calendar year, only those students living in Title I designated areas were participating in the Title I

[6]Enrollment figures show 238 students enrolled in the school's special education classes. Only 186 of these students were designated as Title I eligible students, and only 162 of these students were part of the evaluation. The remaining students either entered the program too late to be tested or were considered untestable.

program, except at schools having only one or two non-Title I students. In cases such as these, all multiply handicapped students were provided Title I instruction.

The Title I evaluator for this program during the school year 1974-1975 made recommendations regarding additional staff, changes in the evaluation procedures, transportation, the physical facilities, and program scope. His recommendation of adding health aides and a therapy team was not carried out.[7] The evaluation procedures have been changed so that criterion-referenced measurement now forms the heart of the evaluation although the program uses tests other than those recommended by the evaluator. Since transportation, other than from classroom to the Title I teacher or support staff, was not a part of any Title I activities, the recommendation made by the evaluator that transportation be limited to smaller numbers was not appropriate.[8] Although the past evaluator recommended physical facilities be "upgraded to include support rails and ramps in areas such as libraries, lunch rooms, auditoriums, and toilets" (presumably in areas of the schools not housing multiply handicapped students), there seemed to be no such provisions outside the area given to the multiply handicapped program. The past evaluator's final recommendation was that the program be expanded to cover 300-350 students. Although this was reflected in the program proposal, the Title I program enrollment was only 186.

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[7] Indeed, if such were carried out, there would be a question of the extent such support should be provided only to Title I students. It would seem that this added personnel should benefit all students in the school, not just Title I students. It seems then that if this service were provided, it should be supported by tax levied funds.

[8] The Title I program consisted entirely of individualized instruction by the Title I teachers and supporting services from the psychologist, guidance counselor, social worker, and family aides. Title I teachers would help the regular classroom teachers on field trips although that should not be considered part of Title I activities.

Chapter IV

Summary of Major Findings, Conclusions, and Recommendations

In light of the criterion established in the first evaluation objective the program was a success. Despite the late entry testing resulting from changes in staff, 70 percent of the students achieved mastery during the program of at least five objectives in language and another 70 percent achieved mastery of five objectives in mathematics.

Further analyses indicated the extent that students mastered the objectives as a result of instruction. Over half of the students answered three of five items correct in language and mathematics. The achievement of the first evaluation objective becomes even more remarkable when it is noted that 12 percent of the students answered correctly at least 24 of the 28 items in the entry test, making it impossible for those students to achieve the first evaluation objective. By the conclusion of testing approximately one-third of the students had mastered all of the objectives, and over half of the students had mastered 25 of the 28 objectives. This finding held true for both language and mathematics, over half of the students mastering at least 70 percent of the objectives they missed on entry testing. Achievement levels were excellent for both language and mathematics objectives, with only seven language objectives and six mathematics objectives having achievement ratios less than one-half.

Results of the discrepancy analysis indicated that all of the project staff performed their duties as described in the project proposal and in

ways described in that proposal. Although designed for 300 students, only 186 Title I students were enrolled in the program.

As a result of interviewing project staff on site and the analysis of data, the following are recommended:

1. The program should be continued at the present sites and expanded to new sites if additional teaching staff can be brought into the program. The program could be expanded to one more school with no more than 20 students without overextending the present teaching staff. Results of the data analysis, based on a shortened time period, bear out the success of the program. The program as established is operating smoothly and no major changes should be considered.
2. Because the TOBE has such a profound effect on the structure of the instructional program, it should be reviewed by project staff to determine whether the objectives measured by the test correspond to those desired for the program. In other words, there needs to be an answer to the question, "Do the objectives measured correspond to the objectives we want to measure?"
3. Results of the testing indicate that the level of the test is simply too low for many of the students. Many of the higher functioning students had mastered most of the objectives prior to the program. Those students need to acquire higher level skills--e.g., word recognition, number recognition, computation, etc. Another level of testing should be added to the program, and hence the evaluation, to provide the higher functioning students with some challenge.

4. A test should be considered that uses physical objects with items rather than drawings. Some students would demonstrate mastery with physical objects, yet because of their difficulties with perception, they failed the same concept when presented in paper pencil format.
5. A student file of the test results, including concept mastery results, should be maintained for each student for reference in subsequent years. Retesting in the following year would also provide information on retention. A student file has been developed, and project staff should examine the extent of retention in the next year if the TOBE is used again.
6. Teaching staff should meet approximately once a month to discuss teaching approaches to each objective and develop teacher-made materials. In interviewing teachers it was noted that some had excellent success in teaching certain concepts, while other teachers had extreme difficulty with the same concept. Materials should incorporate objects commonly found in the children's environment.
7. Inservice training should be provided to teachers in motor perceptual skills and the ways motor perceptual tasks can be used to teach the TOBE objectives. Past research has demonstrated a close relationship between such skills and the ability to learn to read. Since perception is extremely difficult for most students in the program, this would provide a valuable aid.
8. Close attention must be paid to the distinction between the Title I multiply handicapped program and the tax levied program for multiply handicapped students. In past years and at the very

beginning of the current year, this distinction was not clear. The current project coordinator has made great strides in distinguishing the two aspects of the program. His effort should be carried through to following years and sharpened whenever possible.

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(attach to NARRATIVE) Function # 09-69603

In this table enter all Data Loss information. Between the MIR and this form, all participants in each activity must be accounted for. The component and activity codes used in completion of the MIR should be used here so that the two tables match. See definitions below table for further instructions.

Component Code	Activity Code	(1) Group I.D.	(2) Test Used	(3) Total N	(4) Number Tested/ Analyzed	(5) Participants Not Tested/ Analyzed		(6) Reasons Why Students Were Not Tested, Or If Tested, Were Not Analyzed	
						N	%		Number
6 0 8 6 1 5 2	7 2 0	52	TOBE-70	186	162	19	10.2%	Entered the program late	5
								Untestable due to handicapping condition	19
6 0 9 6 1 5 2	7 2 0	52	TOBE-70	186	162	19	10.2%	Entered the program late	5
								Untestable due to handicapping condition	19

(1) Identify the participants by specific grade level (e.g., grade 3, grade 9). Where several grades are combined, enter the last two digits of the component code.
(2) Identify the test used and year of publication (MAT-70, SDAT-74, Houghton Mifflin (IPMS) Level 1 etc.)
(3) Number of participants in the activity.
(4) Number of participants included in the pre and posttest calculations.
(5) Number and percent of participants not tested and/or not analyzed.
(6) Specify all reasons why students were not tested and/or analyzed. If any further documentation is available, please attach to this form. If further space is needed to specify and explain data loss, attach additional pages to this form.
(7) For each reason specified, provide a separate number count.

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THE STATE EDUCATION DEPARTMENT
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Albany, New York 12234

MAILED INFORMATION REPORT FOR CATEGORICALLY AIDED EDUCATION PROJECTS

SECTION II

1975-76 School Year

Due Date: July 1, 1976

SED Project Number: | 3 | 0 | 7 | 5 | 0 | 0 | | 7 | 6 | | 0 | 0 | 2 | | | |

BE Function Number (N.Y.C. only): | 0 | 9 | 6 | 9 | 6 | 0 | 3 |

Project Title BCRMD Program for Multiply Handicapped

School District Name DSEPPS-75

School District Address 110 Livingston Street

Brooklyn, N.Y.

Name and Title of Person Completing this form:

Name Dr. Gary Echternacht

Title Consultant-Evaluator

Telephone Number (609) (Area Code) 695-4294

Date this form was completed 6 / 2 / 76 .

13. Criterion Referenced Test (CRT) Results.

In the table below, enter the requested information about criterion referenced test results used to evaluate the effectiveness of programs in reading and mathematics; particularly for those of less than 60 hours duration. Use the Instructional Mastery codes appended to this form for those skills which the program attempted to improve. Please provide data for each test used and each level tested. Use additional sheets if necessary.

Component Code							Instructional Mastery Code				Publisher	Level	Pretest No. of Pupils		Posttest	
													Passing (1)	Failing (2)	No. of Pupils from Col. (2) Passing	No. of Pupils from Col. (2) Failing
6	0	8	6	1	5	2	2	3	0	5	CTB/McGraw Hill	L	150	12	10	2
"							2	4	0	3	"	"	91	71	60	11
"							2	3	0	5	"	"	120	42	33	9
"							2	4	0	6	"	"	135	27	21	6
"							2	1	0	2	"	"	95	67	26	41
"							2	4	0	3	"	"	118	44	29	15
"							2	4	0	3	"	"	111	51	39	12
"							2	4	0	6	"	"	115	49	27	22
"							2	3	0	5	"	"	105	57	42	15
"							2	4	0	6	"	"	142	20	17	3
"							2	4	0	6	"	"	58	104	66	38

13. Criterion Referenced Test (CRT) Results.

In the table below, enter the requested information about criterion referenced test results used to evaluate the effectiveness of programs in reading and mathematics; particularly for those of less than 60 hours duration. Use the Instructional Mastery codes appended to this form for those skills which the program attempted to improve. Please provide data for each test used and each level tested. Use additional sheets if necessary.

Component Code	Instructional Mastery Code	Publisher	Level	Pretest No. of Pupils		Posttest	
				Passing (1)	Failing (2)	No. of Pupils from Col. (2) Passing	No. of Pupils from Col. (2) Failing
6 0 8 6 1 5 2	2 3 0 5	CTB/McGraw Hill	L	80	82	60	22
"	2 1 0 2	"	"	79	83	35	48
"	2 1 0 1	"	"	70	92	60	32
"	2 3 0 5	"	"	80	82	61	21
"	2 4 0 6	"	"	90	72	41	31
"	2 4 0 6	"	"	131	31	26	5
"	2 3 0 5	"	"	123	39	18	21
"	2 1 0 2	"	"	91	71	26	45
"	2 4 0 6	"	"	67	95	55	40
"	2 2 0 8	"	"	83	79	46	33
"	2 4 0 3	"	"	83	79	53	26

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Component Code							Instructional Mastery Code				Publisher	Level	Pretest No. of Pupils		Posttest	
													Passing (1)	Failing (2)	No. of Pupils from Col. (2) Passing	No. of Pupils from Col. (2) Failing
6	0	8	6	1	5	2	2	3	0	5	CTB/McGraw Hill	L	117	45	30	15
"							2	1	0	2	"	"	117	45	25	20
"							2	3	0	5	"	"	100	62	28	34
"							2	1	1	0	"	"	69	93	52	41
"							2	4	0	6	"	"	97	65	26	39
"							2	1	0	1	"	"	75	87	41	46
6	0	9	6	1	5	2	1	1	0	1	"	"	123	39	33	6
"							1	1	0	1	"	"	121	41	37	4
"							1	1	0	1	"	"	123	39	30	9
"							1	1	0	2	"	"	128	34	11	23
"							1	1	0	1	"	"	78	84	56	28

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Component Code	Instructional Mastery Code	Publisher	Level	Pretest No. of Pupils		Posttest	
				Passing (1)	Failing (2)	No. of Pupils from Col. (2) Passing	No. of Pupils from Col. (2) Failing
6 0 9 6 1 5 2	1 1 0 2	CTB/McGraw Hill	I	79	83	52	31
"	1 1 0 8	"	"	111	51	41	10
"	1 1 0 1	"	"	116	46	37	9
"	1 1 0 1	"	"	118	44	34	10
"	1 1 0 1	"	"	114	48	45	3
"	1 3 0 4	"	"	52	110	60	50
"	1 1 0 1	"	"	64	98	46	52
"	1 1 0 1	"	"	94	68	54	14
"	1 1 0 7	"	"	84	78	51	27
"	1 1 0 1	"	"	101	61	30	31
"	1 1 0 1	"	"	53	109	39	70

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In the table below, enter the requested information about criterion referenced test results used to evaluate the effectiveness of programs in reading and mathematics; particularly for those of less than 60 hours duration. Use the Instructional Mastery codes appended to this form for those skills which the program attempted to improve. Please provide data for each test used and each level tested. Use additional sheets if necessary.

Component Code							Instructional Mastery Code				Publisher	Level	Pretest No. of Pupils		Posttest	
													Passing (1)	Failing (2)	No. of Pupils from Col. (2) Passing	No. of Pupils from Col. (2) Failing
6	0	9	6	1	5	2	1	3	0	2	CTB/McGraw Hill	L	109	53	31	22
"							1	2	0	6	"	"	117	45	32	13
"							1	3	0	6	"	"	117	45	25	20
"							1	2	0	1	"	"	68	94	59	35
"							1	1	0	8	"	"	93	69	28	41
"							1	1	0	1	"	"	74	88	63	25
"							1	1	0	3	"	"	74	88	38	50
"							1	1	0	2	"	"	120	42	21	21
"							1	2	0	7	"	"	78	84	55	29
"							1	1	0	1	"	"	90	72	35	37
"							1	1	0	1	"	"	80	82	41	41

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In the table below, enter the requested information about criterion referenced test results used to evaluate the effectiveness of programs in reading and mathematics; particularly for those of less than 60 hours duration. Use the Instructional Mastery codes appended to this form for those skills which the program attempted to improve. Please provide data for each test used and each level tested. Use additional sheets if necessary.

Component Code							Instructional Mastery Code				Publisher	Level	Pretest		Posttest	
													No. of Pupils		No. of Pupils from Col. (2) Passing	No. of Pupils from Col. (2) Failing
													Passing (1)	Failing (2)		
6	0	9	6	1	5	2	1	1	0	2	CTB/McGraw Hill	L	105	57	29	28

Program for Multiply Handicapped Pupils

Abstract

The program for Multiply Handicapped Pupils was aimed at providing supplementary instruction in pre-reading and mathematics concepts to Title I eligible students in a tax levied program for the multiply handicapped. The program used a diagnostic/prescriptive approach to instruction. Analysis of pupil mastery of the test objectives formed the basis of the evaluation. Five distributions were obtained from the test results as reported by the Title I teachers. Analysis of the classroom testing data indicated that the evaluation goal -- having 70 percent of the students achieve mastery in at least five objectives, both for reading and mathematics-- was achieved. This was accomplished despite not starting testing until December 1, 1975 because of staff changes brought about by school budget cutbacks in the fall. Further analyses indicated that many, but by no means all, students had mastered most of the objectives prior to the program. In fact 12 percent of the students had mastered 24 or more of 28 objectives prior to instruction, which made it impossible for these students to achieve the evaluation goal. Student attainment of the objectives was excellent: more than half of the students had mastered at least 26 of 28 objectives in language and mathematics. Almost one third of the students had mastered all objectives by the conclusion of the testing. A discrepancy analysis indicated that the program was carried out as described in the project proposal. Enrollment in the program was less than anticipated in the proposal.